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Jawaharlal Nehru

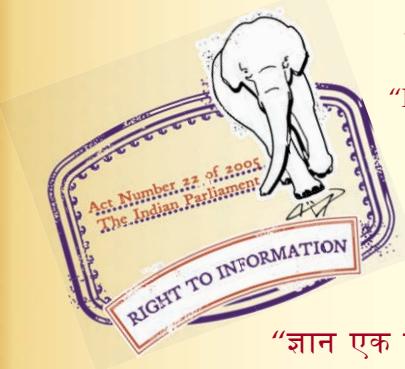
“Step Out From the Old to the New”

IS 10449 (1983): Code for transport of live fish seed for inland pisciculture purposes [FAD 5: Livestock Feeds, Equipment and Systems]

“ज्ञान से एक नये भारत का निर्माण”

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Bhartṛhari—Nītiśatakam

“Knowledge is such a treasure which cannot be stolen”





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*Indian Standard*

CODE FOR  
TRANSPORT OF LIVE FISH SEEDS FOR  
INLAND PISCICULTURE PURPOSES

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INDIAN STANDARDS INSTITUTION  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

# Indian Standard

## CODE FOR

### TRANSPORT OF LIVE FISH SEEDS FOR INLAND PISCICULTURE PURPOSES

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*Indian Standard*

CODE FOR  
TRANSPORT OF LIVE FISH SEEDS FOR  
INLAND PISCICULTURE PURPOSES

**0. F O R E W O R D**

**0.1** This Indian Standard was adopted by the Indian Standards Institution on 31 January 1983, after the draft finalized by the Live Animals Sectional Committee had been approved by the Agricultural and Food Products Division Council.

**0.2** The transport of live fish seeds of inland species is an important part of pisciculture. Since the stocking of inland water with seeds is mostly seasonal, the timely implementation and success of national programme for extension and intensification of pisciculture would largely depend upon the speed and effectiveness with which the fish seeds are transported from the limited centres of collection or production to the far flung water areas spread over the entire country. The existing transport practices range from open containers with renewal of water at intervals to closed polyethylene bags sealed with oxygen under pressure.

**0.3** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960\*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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**1. SCOPE**

**1.1** This code prescribes the conditions for transport of live fish seeds of inland fish species for pisciculture purposes.

NOTE — This Code excludes seeds of fresh water shell fish.

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\*Rules for rounding off numerical values ( *revised* ).

## 2. DEFINITION

**2.1** For the purpose of this standard the following definitions shall apply.

**2.1.1 Fish Seeds** — Fish seeds (fertilized eggs, spawn, fry and fingerlings) of quick-growing species of warm and cold fresh water fish meant for development of inland pisciculture.

## 3. GENERAL REQUIREMENTS

**3.1** The live fish seeds shall be stored where they shall not be subjected to desiccation, extreme high and low temperatures and any other type of stress.

**3.2** Only healthy, disease resistant and conditioned live fish seeds shall be selected and released for packing and transportation.

**3.3** As far as practicable, live fish seeds of the same species and size shall be packed for transport. However, fish seeds of certain compatible species, of uniform size which are non-predaceous in habits can be packed in the same container.

**3.4** Fish seeds, as far as possible, shall be transported either by air or by the fastest passenger train.

**3.5** Minimum of 50 percent of the space in each polyethylene bags used as containers for holding live fish seeds shall be filled with oxygen, so as to provide a pressure of 1.0 kg per  $\text{cm}^2$ . The mouth of the polyethylene bag shall be tied tightly to prevent escape of oxygen during transportation.

**3.6** During transport, jerks, jolts and shocks shall be avoided, as far as possible. In case of transport by rail, the fastest train shall be chosen and in case of road transport for short distances nearest but metalled or good surfaced-road shall be used.

## 4. PACKING REQUIREMENTS

**4.1 Fertilized Eggs** — Fertilized eggs of brown and rainbow trouts at eyed-stage shall be transported in insulated wooden cabinet of the dimensions  $50 \times 25 \times 40$  cm. On the top of the cabinet 20 cm high cupboard with galvanized wire-netting base shall be provided to pack moss with snow or ice. Under the cupboard two trays shall be arranged above the other perforated zinc sheet base for packing moss, and to hold the water from the melting snow or ice lying above. Below the two trays 42 egg trays shall be placed in two rows of tray 21 each. Each egg tray ( $23 \times 23 \times 100$  cm) shall have a muslin cloth base to keep the eggs moist. Each egg tray shall hold 1 000 eyed eggs in a single layer.

## 4.2 Spawn, Fry and Fingerlings

**4.2.1** Only tested leakproof polyethylene bags having not less than 75 micron thickness shall be used to pack spawn, fry and fingerlings of fresh water fish. The dimensions of polyethylene bags shall be 82 x 60 cm.

**4.2.2** The fish seed of Indian and exotic carps shall be packed in accordance with size and number as given in Table 1, to avoid mortality of more than 5 percent.

**TABLE 1 PACKING DENSITY OF CARP SPAWN, FRY AND FINGERLINGS**

SIZE RANGE ( mm )	DURATION OF TRANSPORT ( hours )	NUMBER TO BE PACKED PER POLYETHYLENE BAG	
		(1)	(2)
5 to 10	12 to 24		10 000-12 000
11 to 20	Up to 12		2 500
21 to 30	Up to 12		1 500
31 to 40	Up to 12		1 000
41 to 50	Up to 12		300
51 to 60	Up to 12		200
61 to 70	Up to 12		100
71 to 80	Up to 12		50

**4.3** The polyethylene bags holding live fish seeds shall be packed in an outer 16.5 litre oil cans having press-in-lid. The tins shall be of good quality, rust-free, and of enough strength to withstand the stresses and strains encountered during transportation by air or rails and/or road. Only one polyethylene bag shall be packed in each tin.

**4.4** As far as possible the tins shall be insulated with thermocole lining from inside. Alternatively some soft packing material ( paper shaving/ old newspaper ) shall be provided at the bottom and four sides of the tin to act as cushioning material to the polyethylene bag and to give protection from tearing off and temperature fluctuations.

**4.5** The polyethylene bag shall be filled with pure chlorine-free fresh water up to 50 percent of its capacity before releasing spawn, fry and fingerlings.

**4.6** Loading and unloading of the tins shall be done efficiently and quickly after sealing the mouth of the polyethylene bag and be done immediately after the arrival of the consignment of fish seed. The tins shall be handled with care during storage in aircraft, train or motor lorry.

## **5. LABELLING**

**5.1** Each tin shall bear a label giving the following information written legibly and indelibly:

- a) Name of the species;
- b) Stage of fish seeds ( spawn, fry or fingerlings ),
- c) Name, address and telephone number of the consignor; and
- d) Name, address and telephone number of the consignee.

**5.2** Each container shall also be marked with a cautionary notice reading as under:

‘TOP PRIORITY. LIVE FISH SEEDS. HANDLE WITH CARE’

**5.3** Each container shall bear on the face a red arrow showing the upper side.